

Section 9: Shortage Contingency Plan

The Vallecitos Water District (VWD) adheres to regulatory standards requiring that urban water agencies conduct a water shortage contingency analysis as a part of their 2010 Urban Water Management Plans (UWMPs). As an agency that is 100 percent reliant on water supplied by the San Diego County Water Authority (SDCWA), the VWD UWMP is based on the SDCWA's analysis and addresses supply shortages due to catastrophe, drought, or other situations.

This section addresses the SDCWA's plans to address catastrophic water shortage events. It then discusses strategies utilized by the Metropolitan Water District of Southern California (MWD), the SDCWA and VWD to manage supply shortfalls during a drought period and increase water supply reliability. Finally, this section provides a brief analysis of the impacts of such strategies on VWD's revenues and expenditures, and estimates the minimum water supplies available over the next three years.

9.1 Catastrophic Water Shortage

A catastrophic water shortage occurs when a disaster, such as earthquake, results in insufficient available water to meet the region's needs or eliminates access to imported water supplies. For increased reliability, VWD subscribes to SDCWA's Integrated Contingency Plan (ICP) and Emergency Storage Program (ESP). Both were developed to protect public health and safety and to potentially limit economic damage that could occur from a severe shortage of water supplies.

9.1.1 *Integrated Contingency Plan*

SDCWA's ICP provides information necessary to respond to an emergency that causes severe damage to SDCWA's water distribution system or impedes SDCWA's ability to provide reliable service to its member agencies. The ICP describes the situations and incidents that will trigger the activation of SDCWA's ICP and Emergency Operations Center. It also provides direction and strategies for responding to a crisis. SDCWA's ICP includes:

- Authorities, policies, and procedures associated with emergency response activities

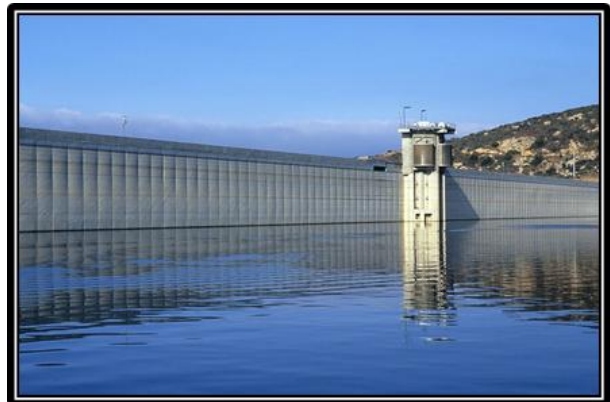
- Emergency Operations Center activities, including activation and deactivation guidelines
- Multi-agency and multi-jurisdictional coordination, particularly between SDCWA, its member agencies, and MWD in accordance with Standardized Emergency Management System and National Incident Management System guidelines
- Incident Command System management and organization and emergency staffing required to assist in mitigating any significant emergency or disaster
- Mutual Aid Agreement and covenants that outline the terms and conditions under which mutual aid assistance will be provided
- Hazard specific action plans and Incident Command System position checklists

In addition, the plan uses a step-by-step approach to emergency response planning by providing tools such as resource and information lists, personnel rosters, pertinent policies and procedures, and reference materials.

9.1.2 Emergency Storage Program (ESP)

In June 1998, the SDCWA Board authorized implementation of the ESP to reduce the risk of potential catastrophic damage that could result from a prolonged interruption of imported water due to earthquake, drought, or other disasters. The ESP is a system of reservoirs, pipelines and other facilities that will work together to store and move water around the county in the event of a natural disaster. The ESP will provide, when complete, up to six months of emergency water storage in the San Diego region.

The ESP facilities are located throughout San Diego County and are being constructed in phases. Construction of the first facilities began in 2000. The initial ESP phase included construction of the 318-foot-high Olivenhain Dam and accompanying Olivenhain Reservoir, which together added 24,300 acre-feet (AF) of emergency storage for the region. Raising the height of the San Vicente Dam is the last major component of the ESP and should be completed by 2012. The raised dam will add an additional 117 feet, making it the tallest dam raise in the United States and will allow for an additional 52,000 AF of emergency storage, as well as 100,000 AF of carryover storage. When completed, the ESP will provide 90,100 AF of stored water for emergency purposes to meet San Diego



Olivenhain Dam

County's needs through at least 2030. The SDCWA Board of Directors may also authorize that supplies from the ESP be used in a prolonged drought or other water shortage situation where imported and local supplies do not meet 75 percent of the SDCWA's member agencies' municipal and industrial demands.

For information on the SDCWA's methodology for calculating the allocation of ESP supplies to member agencies in a prolonged outage situation without imported supplies, see Section 11 of the SDCWA's UWMP.

9.2 Drought Management Planning

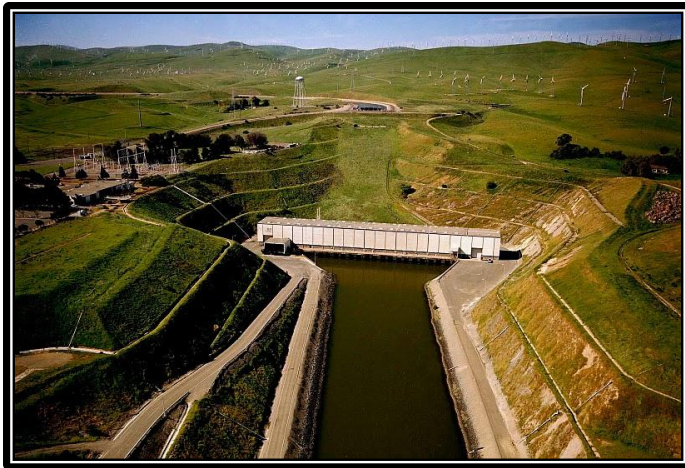
VWD has planned for potential water shortages through coordination with SDCWA. SDCWA's Water Storage and Drought Response Plan (WSDRP), which serves as the region's guiding shortage management document, most recently highlights the actions taken during the 2007-2010 storage period to manage supply shortfalls and contains information on the SDCWA's dry-year supplies.

Following the major drought in California between 1987 and 1992 that led to severe water supply shortages throughout the state, SDCWA and its member agencies aggressively developed plans to minimize the impact of potential shortages. In 2006, SDCWA's Board adopted the WSDRP to serve as a comprehensive plan in the event that the region faced supply shortages due to drought or other water shortage conditions.

The WSDRP was developed by SDCWA in coordination with its member agencies to provide a balanced, flexible, systematic approach to identifying regional actions necessary to reduce the impacts from shortages. It includes all aspects of drought planning, from steps to avoid rationing, to drought response stages, allocation methodology, pricing, and a communication strategy. Multiple actions are identified to manage shortage situations, including both supply augmentation measures and demand reductions up to 50 percent in water supply. Conservation savings is an essential component of meeting the need for water in time when available supplies are limited.

For more information on SDCWA's WSDRP, see Section 11 of SDCWA's UWMP.

9.2.1 Summary of 2007-2011 Shortage Period Management Actions



Increased pumping restrictions at the Harvey O. Banks pumping plant in the Bay-Delta have attributed to supply shortages in Southern California.

The last water shortage affecting VWD can be attributed to constrained supplies in 2007 tied to increased restrictions on State Water Project pumping due to the Bay-Delta environmental considerations. The Colorado River was also in the midst of a prolonged multi-year drought that began in 2000. In April 2007, MWD notified its member agencies that it expected challenges in meeting demands due to insufficient imported water supplies from the State Water Project and the Colorado River. In order to meet demands, MWD announced that it would implement

shortage-related actions consistent with its Water Surplus and Drought Management (WSDM) Plan, including a need to draw upon its storage to meet expected 2007 demands. MWD adopted its WSDM Plan in 1999 as guidance for managing regional water supplies during both surplus and shortage situations. The MWD announcement that it would need to draw upon its storage to meet demands is what triggered implementation of the SDCWA's WSDRP.

The SDCWA began to implement a series of response measures identified in its WSDRP to reduce potential shortage impacts, starting with a call for voluntary conservation, and securing dry-year water transfers and storage programs for the region. As dry conditions persisted into 2009, the SDCWA and its member agencies intensified their drought response activities.

In April 2009, MWD's Board of Directors voted to allocate urban water deliveries in fiscal year 2010 for the first time in decades to its member agencies. In turn, the SDCWA allocated water deliveries to its member agencies using the supply allocation methodology contained in the WSDRP. The SDCWA's long-term strategy to improve water supply reliability by diversifying the region's water supply portfolio helped offset some of the required cutbacks from MWD. However, voluntary conservation turned to mandatory water use restrictions in many areas throughout SDCWA's service area. On May 6, 2009, the VWD Board authorized moving to Drought Response Level 2 and

required customer demand reduction of at least 10 percent in order to meet the SDCWA's demand allocation.

Residences and businesses responded to the call for conservation, and urban water use fell throughout San Diego County. At the end of fiscal year 2010, VWD only utilized 83.8 percent of its municipal and industrial allotment from the SDCWA, which saved the region 2,949 acre-feet of potable water. Although hydrologic conditions began to improve, 2010 storage reserves remained low and allocations continued into early 2011 to help restore storage reserves. More information regarding VWD's water use reduction determination is included in Appendix F.

9.2.2 SDCWA Dry-Year Supplies and Carryover Storage

The SDCWA's dry-year supplies and carryover storage are an important component of managing potential shortages within the region and for increasing supply reliability for the region. The dry-year supplies assist in minimizing or reducing potential supply shortages from MWD. Through the last five years, the SDCWA developed a carryover storage program to more effectively manage supplies. This includes in-region surface storage currently in member agency reservoirs and increasing capacity through the raising of San Vicente Dam, which should be completed by 2012. The SDCWA also currently has an out-of-region groundwater-banking program in the California central valley. Through such efforts, SDCWA can store water available during wet periods for use by member agencies such as VWD during times of shortage. The SDCWA also implemented a dry-year transfer program during the last shortage period and successfully acquired and utilized dry-year transfer supplies in 2009.



The San Vicente Dam raising project is just one way the SDCWA is increasing water storage for the future.

SDCWA Carryover Storage Program

The carryover storage program provides water for the region in the case of a supply shortage, such as during a drought. The SDCWA has identified three main needs for carryover storage:

- Enhance reliability of the water supply: During dry weather periods, increased regional demand for water may exceed available supplies, resulting in potential water shortages. Carryover storage provides a reliable and readily available source of water during periods of shortage, such as during dry years.
- Increase system efficiency: Carryover storage provides operational flexibility to serve above normal demands, such as those occurring during peak summer months or extended droughts, from locally stored water rather than by the over-sizing of imported water transmission facilities.
- Better management of water supplies: Carryover storage allows the SDCWA to accept additional deliveries from its existing State Water Project and Colorado River-derived sources during periods of greater availability, such as during wet years, to increase water availability locally during periods of shortage, such as during dry years.

The SDCWA's Water Facilities Master Plan (December 2002) identified a need for approximately 100,000 AF of carryover storage to assist in maintaining a secure and reliable supply for the region. The San Vicente Dam Raise Project will meet this need by providing approximately 100,000 AF of local storage and facilitate the reliable and efficient delivery of water to the SDCWA's member agencies.

In accordance with the SDCWA's WSDRP, potential utilization of carryover storage supplies could occur in either a Stage 2 or Stage 3 drought declaration. The amount of water taken from carryover storage reserves to manage potential shortages is influenced by a number of factors and should generally be handled on a case-by-case basis. Many of the factors influencing the storage take will vary depending upon conditions present. These factors include, but are not limited to:

- Current water demand trends;
- Core water supply availability from imported and local sources;
- Existing and projected hydrologic conditions;
- Storage supply available for withdrawal;
- Take capacity from the groundwater banking program; and
- Need to avoid depletion of storage reserves.

For planning purposes in the SDCWA's 2010 UWMP, general guidelines are established that approximately one third of the carryover supplies available in storage will be utilized in one year. Utilizing only a portion of available storage supplies avoids depletion of storage reserves, thereby making water available for potential ongoing or future shortages.

For more information on the SDCWA carryover storage program, see Section 11 of the SDCWA UWMP.

SDCWA Dry-Year Transfer Program

To ensure adequate water supplies in the face of continued drought conditions (2007-2010) and regulatory constraints, and as part of SDCWA's WSDRP, the SDCWA



The Sacramento-San Joaquin Delta is California's single largest source of water, and supplies water to the State Water Project system.

developed a plan to secure one-time water transfer agreements, which could lay the foundation for long-term agreements. Although transfers of water supplies through the Delta may be subject to curtailments during certain periods due to operation of the pumps in the State Water Project system, the SDCWA pursued opportunities as supply options in the event that Colorado River surplus was suspended or dry-year conditions continued. The supply could also hedge against shortfalls resulting from the reduced State Water Project allocation.

In 2009, SDCWA acquired 20,000 AF of water under a one-year transfer agreement with Placer County Water Agency in Northern California to lessen the impact of water supply reductions to the San Diego region. The transfer eased the region's transition from voluntary conservation to mandatory water use restrictions by keeping regional water savings target for the year at a manageable level. In 2010, the SDCWA actively sought water transfer options, however, due to the changed conditions of the SDCWA's water demands, which have significantly dropped since MWD enacted Level 2 of its Water Supply Allocation Plan in July 2009, as well as the expense required to obtain the necessary approvals and agreements, and the comparatively higher cost of the supplies, the SDCWA Board approved not exercising its call rights to the 2010 dry-year transfer with the South Feather Water and Power Agency. The SDCWA Board also decided to end its pilot program efforts between San Juan Water District, Santa Clara Valley Water District and the SDCWA for calendar year 2010 and continue it over to 2011.

For more information on the SDCWA dry year transfer program, see Section 11 of the SDCWA UWMP.

9.2.3 *Model Drought Response Conservation Ordinance*

In March 2008, the SDCWA's Board approved for release a Model Drought Response Conservation Program Ordinance (Model Drought Ordinance) for use by VWD and other member agencies in updating their existing ordinances. The Model Drought Ordinance was developed with input from the member agencies to provide regional consistency during periods of shortages. The Department of Water Resources's 2008 Updated Urban Drought Guidebook was also utilized as a reference document for preparation of the Model Drought Ordinance. It identifies four drought response levels that contain water-use restrictions to help achieve demand reduction during temporary shortages. The restrictions become more stringent at each successive level to obtain necessary savings and delay economic impact until higher levels. The Model Drought Ordinance served as a model to VWD in updating its Drought Response Conservation Program (Ordinance No. 162). See Section 7.2 and Appendix E regarding water conservation practices, requirements and water waste prohibitions involved in VWD's four drought response levels within its Drought Response Conservation Program.

9.2.4 *Penalties for Excessive Water Use*

Penalty rates may be used by the SDCWA to encourage conservation and reduce demand during a drought or other water supply shortage. If MWD allocates imported water supplies to the SDCWA, MWD can impose surcharges (penalty pricing) on water consumption in excess of the SDCWA's allocation. SDCWA's Implementing Resolution provides for pass through to VWD of any penalties levied by MWD on SDCWA for exceeding its annual allocation. Penalties can be assessed on a pro rata basis to VWD if it should exceed allocations, and only if the SDCWA exceeds its allocation from MWD. SDCWA may compensate for increased costs or reduced water sales by adjusting water rates in succeeding years.

Rates may also be adjusted based on any other allocation program implemented by SDCWA as determined necessary. SDCWA may also reduce the amount of water it allocates to VWD or any other member agency should it fail to adopt or implement water use restrictions.

VWD's Drought Response Conservation Program (Ordinance No. 162) includes a section indicating fines and penalties that may be levied for water waste violations. A copy of VWD Ordinance No. 162 is included in Appendix E. These penalties include:

- \$100 for a first violation

- \$200 for a second violation of any provision of the ordinance within one year of the prior violation
- \$500 for each additional violation of this ordinance within one year of the prior violation
- Violation of a provision of this ordinance is subject to enforcement through installation of a flow-restricting device in the meter

For any subsequent violations within a period that a Water Conservation Stage is in effect, the Board would conduct a hearing and may, in its discretion, order either (1) an installation of a flow restrictor, or (2) the discontinuance of service, each for such a period of time that the Board deems appropriate under the circumstances. Vallecitos Water District shall, at least 10 days before the date set for the hearing, mail a written notice of the hearing.

Furthermore, penalties also exist in Ordinance No. 162 to prosecute each violation as a misdemeanor punishable by imprisonment in the county jail for not more than 30 days and/or by a fine not exceeding \$1,000. Additionally, willful violations of the mandatory conservation measures and water use restrictions as set forth during Stage 4 may be enforced by discontinuing service to the property at which the violation occurs, as provided by California Water Code §346.

9.2.5 *Revenue & Expenditure Impacts*

Although VWD maintains financial reserves, it is possible that additional costs associated with demand reduction could negatively affect VWD's short-term financial situation. Approximately 80 percent of VWD's fixed costs are shared between all water customers via a monthly ready-to-serve charge. This charge, which varies depending on meter size, recovers water system infrastructure and equipment repairs and maintenance, meter reading, billing, engineering, safety and administration. VWD may compensate for increased costs or reduced water sales by adjusting water rates in succeeding years.

Water conservation is a well-established practice in ensuring that there will be a reliable water supply in the future for the increasing population and commerce within VWD's service area. However, conservation occasionally suffers from the perception that it reduces revenues. Over the long-term, conservation measures actually serve to defer or limit rate increases by reducing VWD's need for other, more expensive supplies and increased infrastructure. Conservation programs also reduce imported water demand that in turn allows the SDCWA to purchase less of MWD's more expensive Tier 2 water.

Tier 2 water is more expensive since it represents MWD's cost to develop additional supplies.

9.2.6 Minimum Water Supply Available over Next Three Years

In accordance with the California Urban Water Management Planning Act, agencies are required to estimate the minimum water supply available during each of the next three years, based on the driest three-year historic sequence. To determine the minimum supplies potentially available to VWD, the same assumptions contained in the multi dry-year analysis in Section 6.2 were used. Table 9-1 contains the minimum estimated supplies.

Table 9-1: Supply Reliability – Current Water Sources

Water supply sources	Average / Normal Water Year Supply	Multiple Dry Water Year Supply		
		Year 2012	Year 2013	Year 2014
San Diego County Water Authority	14,557,942	14,275,903	14,977,762	15,537,933
Percent of normal year:	100	98.1	102.9	106.7
¹ In units gallons per day				

It should be noted that based on current supply and storage conditions statewide, VWD is not currently forecasting this supply scenario. However, if sufficient supplies from the SDCWA are not available to meet demand projections, then VWD shall increase the drought response level described in Section 7.2.1 to prohibit water waste and reduce demands to meet available supplies.